UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,585	08/27/2001	Mikihiro Kajita	Q65648	2717

7590 06/14/2006		EXAMINER
SUGHRUE, MION, ZINN, MACPEAK & SEAS		PAYNE, DAVID C

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ART UNIT	PAPER NUMBER
2613	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	09/938,585	KAJITA, MIKIHIRO
	Examiner	**Art Unit**
	David C. Payne	2613

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 March 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-9,12 and 14-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-9,12 and 14-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 28 December 2005 have been fully considered but they

are not persuasive.

2. Applicant argues that a differential value of detected current is not taught in

Levinson. However, Levinson, col./lines: 1/60-67, disclose a laser diode's "slope

efficiency" is equal to the ratio of changes in the laser's optical output power to

changes in the drive current while operating is the lasing mode. Furthermore,

col./lines: 9/10-14, state "... difference between the measurements are compared". It

is clear to the Examiner that the teaching of Levinson must necessarily perform a

difference calculation if it is to compare values to arrive at a percentage difference.

3. Furthermore, both Levinson and Glance, repeat steps of storing values in EEPROM

and retrieving them for calculation figure 7 and 8 and associated text.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3, 5, 7-9, 12, and 15-22 are rejected under 35 U.S.C. 103(a) as being

    unpatentable over Levinson US 5,019,769 (Levinson) in view of Glance US 4916705

    A (Glance).

    Re claims 1, 18, 21, 22 Levinson disclosed

    A method for detecting an abnormality of an optical module comprising the steps of:

    (a) detecting a value of a current flowing through a specified spot of the optical

    module (e.g., col./line: 5/1-10); (b) holding the detected value of the current in a

    memory (e.g., col./line: 9/16-21); (c) detecting a value of a current flowing through

    the specified spot at every predetermined time (e.g., col./line: 9/22-30); (d) obtaining

    a differential value between the value of the current held in the memory and the

    value of the current newly detected (e.g., col./line: 9/5-15); and (e) generating alarm

    signal indicating a necessity of preventive maintenance when the obtained

    differential value exceeds a predetermined threshold value (e.g., col./line: 9/10-15),

    wherein the value of the current flowing through the specified spot is a value of a

    current in a power line for supplying power to the optical module including a laser

    diode driver (current flowing through resistor 179 of Figure 3, see col./line: 5/1-10), it

    is inherent that measuring power across said resistor detects current from VCC).

    Levinson does not disclose that the newly detected current is stored in memory.

    Glance disclosed taking a difference in current and storing the new value in memory

    (col/line: 1/45 – 2/10; 5/44-50). It would have been obvious to one of ordinary skill in

the art at the time of invention to add a update and store feature similar to Glance's
in the system of Levinson. One is motivated as such since this is a well-known
technique for establishing close loop control of a parameter.

Re claims 3, 19 Levinson disclosed

wherein the value of the current flowing through the specified spot is a monitor

current value of an optical output (w.r.t. claim 11, transmission light source) of the

optical module (e.g., col./line: 13/60-65). Note, it is inherent that voltage

measurement across a known impedance is well known as a current detector as

Levinson disclosed in the aforementioned passage.

Re claims 5 and 12, Levinson disclosed

wherein the value of the current hold in the memory is a value of a current flowing

through the specified spot at the start time of the use of the optical module (e.g.,

col./line: 4/50-55).

Re claims 7 and 15, Levinson disclosed

wherein the detected value of the current flowing through the specified spot of the

optical module is an average value of currents for the predetermined time (e.g.,

col./line: 5/14-15).

Re claim 8, 17, Levinson further disclosed

sending an alarm when the drive current exceeded a predefined level by a certain

percentage which is also understood as a ratio (see Levinson col./line: 9/7-11).

Levinson does not disclose that the newly detected current is stored in memory.

Glance disclosed taking a difference in current and storing the new value in memory

(col/line: 1/45 – 2/10; 5/44-50). It would have been obvious to one of ordinary skill in

the art at the time of invention to add a update and store feature similar to Glance's

in the system of Levinson. One is motivated as such since this is a well-known

technique for establishing close loop control of a parameter.

Re claims 9, 16 and 20, Levinson disclosed

An apparatus for detecting an abnormality of an optical module comprising: a current

detector which detects a value of a current flowing through a specified spot of said

optical module (e.g., col./line: 5/1-10); a memory which holds the value of the current

detected by said current detector e.g., col./line: 9/16-21; an arithmetic circuit ((162)

of Figure 3) which obtains a differential value (*w.r.t.* claim 10, ratio of a differential

value) between the value of the current held in said memory and a value of a current

newly detected by said current detector (e.g., col./line: 9/5-15); and an alarm circuit

(e.g., col./line: 9/13, (162) of Figure 3) which generates alarm signal indicating a

necessity of preventive maintenance when the differential value obtained by said

arithmetic circuit exceeds a predetermined threshold value (e.g., col./line: 9/10-15),

wherein the value of the current flowing through the specified spot is a value of a

current in a power line for supplying power to the optical module including a laser

diode driver (current flowing through resistor 179 of Figure 3, see col./line: 5/1-10).

Levinson does not disclose that the newly detected current is stored in memory.

Glance disclosed taking a difference in current and storing the new value in memory

(col/line: 1/45 – 2/10; 5/44-50). It would have been obvious to one of ordinary skill in

the art at the time of invention to add a update and store feature similar to Glance's

in the system of Levinson. One is motivated as such since this is a well-known

technique for establishing close loop control of a parameter.

6. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Levinson US 5,019,769 (Levinson) in view of Glance US 4916705 A (Glance).

Re claim 6, Levinson does not disclose

wherein the value of the current held in the memory is overwritten to the value of the

current that is newly detected in the specified spot when a differential value is

obtained. However it would have been obvious to one of ordinary skill in the art at

the time of invention to overwrite old data in memory to conserve on the use of

memory where intermediate data points are not needed. Furthermore, this technique

is extremely well known in the art.

Re claim 14, Levinson does not explicitly disclose

wherein said memory includes a first memory and a second memory, said first

memory receives and holds a value of a current from said current detector, and

sends out the value of the current held until then to said second memory, said

second memory holds the value of the current sent from said first memory, and said

arithmetic circuit obtains a differential value between the values of the currents held

in said first memory and said second memory. However, it would have been obvious

to one of ordinary skill in the art that the arithmetic calculations described in

Levinson necessarily require storing two values in separate memory register maps in

order to perform a calculation as this is the most basic function of an ALU in a

microprocessor. Again, the claimed material is extremely well known in the art.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

  policy as set forth in 37 CFR 1.136(a).

   A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

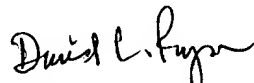than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

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